

Infant Mortality

An Overview: 2005

Infant Deaths	
Number	82
Rate per 1,000 Live Births	7.2
Neonatal Deaths	
Number	52
Rate per 1,000 Live Births	4.5
Postneonatal Death	
Number	30
Rate per 1,000 Live Births	2.6
Fetal Deaths	
Number	43
Rate per 1,000 Live Births + fetal deaths	3.7

During 2005, there were 82 South Dakota resident infant deaths reported for an infant mortality rate of 7.2 per 1,000 live births. In

comparison, there were 93 infant deaths in 2004, with the infant mortality rate of 8.2 per 1,000 live births. Caution should be used when comparing these annual rates, because the number of South Dakota resident births creates a relatively small denominator to determine infant mortality rates; a small change in the number of infant deaths can result in a relatively large rate change. For example, as Table 34 displays and Figure 7 illustrates, large downward spikes occurred in 1996 and 2000. Decreases of 39 infants from 1995 to 1996 and 37 infants from 1999 to 2000 caused large downward spikes in infant mortality rates. Therefore, infant mortality rates should be monitored over a period of time.

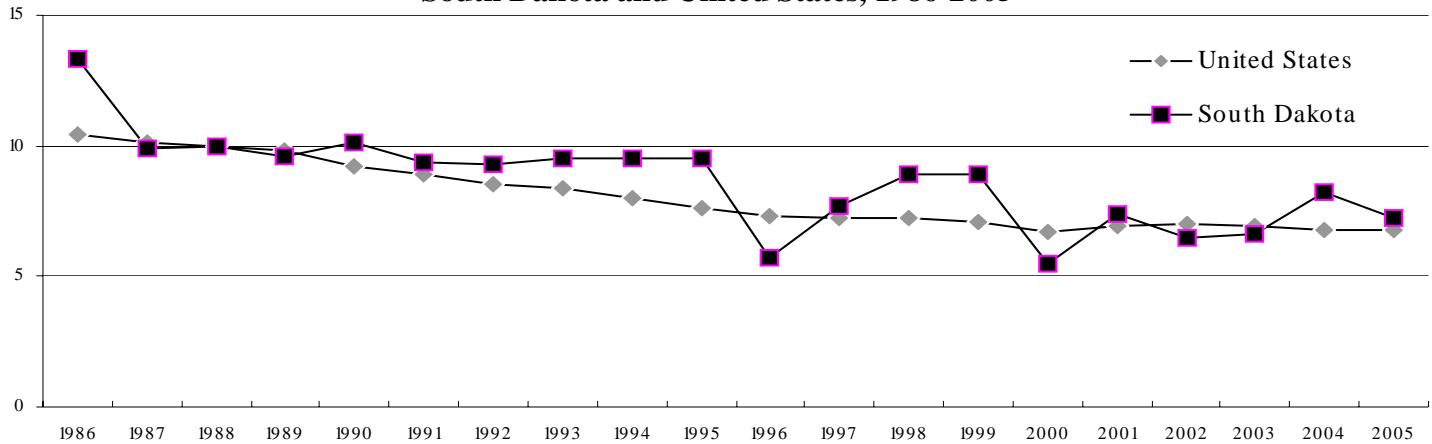
Table 34
Resident Infant Deaths and Infant Mortality Rates,
South Dakota and United States, 1986-2005

Year	United States		South Dakota	
	Number	Mortality Rate	Number	Mortality Rate
2005	*28,000	*6.8	82	7.2
2004	*27,835	*6.8	93	8.2
2003	28,025	6.9	73	6.6
2002	28,034	7.0	70	6.5
2001	27,568	6.8	78	7.4
2000	27,200	6.7	57	5.5
1999	27,937	7.1	94	8.9
1998	28,371	7.2	92	8.9
1997	28,045	7.2	78	7.7
1996	28,487	7.3	60	5.7
1995	29,583	7.6	99	9.5
1994	31,710	8.0	100	9.5
1993	33,466	8.4	102	9.5
1992	34,628	8.5	102	9.3
1991	36,766	8.9	103	9.4
1990	38,351	9.2	111	10.1
1989	39,655	9.8	106	9.6
1988	38,910	10.0	112	10.0
1987	38,380	10.1	114	9.9
1986	38,891	10.4	155	13.3

Note: * U.S. 2005 and 2004 data are provisional.
Infant mortality rates are per 1,000 live births.

Source: National Center for Health Statistics
South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 7
Resident Infant Mortality Rates
South Dakota and United States, 1986-2005



Note: Rate Per 1,000 Live Births.

U.S. 2005 and 2004 data are provisional.

Source: National Center for Health Statistics

South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 35 lists the overall leading causes of infant death in 2005. The leading causes of infant death can be broken down as follows: certain conditions in perinatal period, 43.9

percent; congenital malformations, 25.6 percent; sudden infant death syndrome, 8.5 percent; and accidents for 4.9 percent.

Table 35
South Dakota Resident Leading Causes of Infant Death, 2005

Total Deaths	82
Causes of Death	
Certain Conditions in Perinatal Period.....(P00-P96)	36
Disorders related to short gestation and low birth weight.....(P07)	10
Extremely low birth weight or extreme immaturity.....(P07.0-P07.2)	9
Atelectasis.....(P28.0-P28.1)	9
Newborn affected by complications of placenta, cord, and membranes.....(P02)	5
Newborn affected by complications involving placenta.....(P02.0-P02.3)	4
Newborn affected by maternal complications of pregnancy...(P01)	3
Respiratory distress of newborn.....(P22)	2
Neonatal hemorrhage.....(P50-P52, P54)	2
All other conditions originating in perinatal period	5
Congenital Malformations, Deformations and Chromosomal Abnormalities.....(Q00-Q99)	21
Congenital malformations of heart.....(Q20-Q24)	7
Congenital malformations and deformations of musculoskeletal system, limbs and integument.....(Q65-Q85)	3
Anencephaly and similar malformations.....(Q00)	3
Patau's syndrome.....(Q91.4-Q91.7)	2
All other congenital anomalies	6
Sudden Infant Death Syndrome.....(R95)	7
Accidents.....(V01-X59)	4
Gastritis, duodenitis, and noninfective enteritis and Colitis.....(K29, K50-K55)	2
All Other Causes	12

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

There were 52 neonatal deaths (deaths occurring to infants from birth through 27 days old) for a rate of 4.5 deaths per 1,000 live births. There were 30 postneonatal deaths (deaths occurring to infants 28 days to 1 year of age) for a rate of 2.6 deaths per 1,000 live births. In comparison, 2004 neonatal and postneonatal rates were 5.0 and 3.2 per 1,000 live births, respectively. The number of fetal deaths increased from 34 in 2004 to 43 in 2005, with a corresponding increase in the fetal mortality rate from 3.0 (per 1,000 live births plus fetal deaths) in 2004 to 3.7 in 2005.

Infant Mortality by Race

Table 36 indicates that from 2004 to 2005, the number of South Dakota resident infant deaths decreased for both whites and American Indians. As a result, the infant mortality rate per 1,000 live births decreased for both whites and American Indians in 2005. American Indian infant mortality rates were also significantly higher than whites were for the 20 year total.

Table 36
South Dakota Resident Infant Deaths and Mortality Rates by
Infant's Race, 1986-2005

Year	Race of Infant				Total	
	White		American Indian			
	Number	Rate	Number	Rate	Number	Rate
2005	55	6.1	25	11.6	82	7.2
2004	62	6.9	28	13.3	93	8.2
2003	43	5.0	27	12.9	73	6.6
2002	41	4.7	26	14.4	70	6.5
2001	52	6.1	25	14.1	78	7.4
2000	36	4.3	19	11.3	57	5.5
1999	66	7.6	24	14.4	94	8.9
1998	61	7.3	29	16.9	92	8.9
1997	45	5.3	30	19.5	78	7.7
1996	39	4.5	20	12.3	60	5.7
1995	69	7.9	30	19.2	99	9.5
1994	66	7.5	33	21.5	100	9.5
1993	67	7.6	35	20.3	102	9.5
1992	69	7.6	32	18.4	102	9.3
1991	73	8.1	25	15.0	103	9.4
1990	77	8.4	33	19.8	111	10.1
1989	64	7.0	40	22.8	106	9.6
1988	87	9.3	25	14.7	112	10.0
1987	76	7.9	36	21.2	114	9.9
1986	100	10.2	52	31.0	155	13.3
1986-2005	1,248	7.0	594	17.0	1,881	8.7

Note: Failure of the races to add to the total is due to other and unknown races.
Infant mortality rates are per 1,000 live births.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

When analyzed by race, Table 37 indicates that the South Dakota resident neonatal mortality rate per 1,000 live births decreased for both American Indians and whites from 2004 to 2005. The American Indian

neonatal mortality rate is significantly higher than whites for the 20 year total. However, for the first time since 1988 the American Indian neonatal mortality rate is lower than the white neonatal mortality rate.

Table 37
South Dakota Resident Neonatal Deaths and Mortality Rates
by Infant's Race, 1986-2005

Year	Race of Infant				Total	
	White		American Indian			
	Number	Rate	Number	Rate	Number	Rate
2005	41	4.6	9	4.2	52	4.5
2004	44	4.9	12	5.7	57	5.0
2003	22	2.5	11	5.3	35	3.2
2002	24	2.8	12	6.6	38	3.6
2001	27	3.2	9	5.1	37	3.5
2000	24	2.9	7	4.2	32	3.1
1999	43	5.0	10	6.0	57	5.4
1998	34	4.1	11	6.4	46	4.5
1997	28	3.3	10	6.5	40	3.9
1996	20	2.3	11	6.7	31	3.0
1995	40	4.6	14	9.0	54	5.2
1994	37	4.2	20	13.0	57	5.4
1993	37	4.2	16	9.3	53	4.9
1992	44	4.8	12	6.9	56	5.1
1991	43	4.7	13	7.8	59	5.4
1990	43	4.7	15	9.0	58	5.3
1989	34	3.7	16	9.1	51	4.6
1988	56	6.0	6	3.5	62	5.5
1987	43	4.5	13	7.7	57	5.0
1986	60	6.1	23	13.7	84	7.2
1986-2005	744	4.2	250	7.2	1,016	4.7

Note: Failure of the races to add to the total is due to other and unknown races.

Neonatal mortality rates are per 1,000 live births.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 38, below, indicates that the postneonatal mortality rate per 1,000 live births decreased for white infants and for American Indian infants from 2004 to 2005.

The American Indian post neonatal mortality rate is significantly higher than whites in 2005 and for the 20 year total.

Table 38
South Dakota Resident Postneonatal Deaths and Mortality
Rates by Infant's Race, 1986-2005

Year	Race of Infant				Total	
	White		American Indian			
	Number	Rate	Number	Rate	Number	Rate
2005	14	1.6	16	7.4	30	2.6
2004	18	2.0	16	7.6	36	3.2
2003	21	2.4	16	7.7	38	3.4
2002	17	2.0	14	7.8	32	3.0
2001	25	2.9	16	9.0	41	3.9
2000	12	1.4	12	7.1	25	2.4
1999	23	2.7	14	8.4	37	3.5
1998	27	3.2	18	10.5	46	4.5
1997	17	2.0	20	13.0	38	3.7
1996	19	2.2	9	5.5	29	2.8
1995	29	3.3	16	10.2	45	4.3
1994	29	3.3	13	8.5	43	4.1
1993	30	3.4	19	11.0	49	4.6
1992	25	2.8	20	11.5	46	4.2
1991	30	3.3	12	7.2	44	4.0
1990	34	3.7	18	10.8	53	4.8
1989	30	3.3	24	13.7	55	5.0
1988	31	3.3	19	11.2	50	4.5
1987	33	3.4	23	13.5	57	4.9
1986	40	4.1	29	17.3	71	6.1
1986-2005	504	2.8	344	9.9	865	4.0

Note: Failure of the races to add to the total is due to other and unknown races.

Postneonatal mortality rates are per 1,000 live births.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 39 shows the leading causes of infant death from 2001 to 2005. The overall leading cause of infant death for South Dakota residents from 2001 to 2005 was certain conditions in perinatal period. These conditions include disorders related to short gestation and low birth weight, atelectasis, newborn affected by complications of placenta, cord, and membranes, and newborn affected by maternal complications of pregnancy. Certain conditions in perinatal period

accounted for 35.6 percent of all infant deaths in South Dakota from 2001 to 2005. When analyzed by race, the leading cause of death for both white and American Indian infants was certain conditions in perinatal period. Certain conditions in perinatal period comprised 105 white infant deaths or 41.5 percent of all white infant deaths, while it accounted for 31 American Indian infant deaths or 23.7 percent of all American Indian infant deaths.

Table 39
South Dakota Resident Infant Deaths by Cause of Death and Race, 2001-2005

	Total	Race	
		White	American Indian
Total	396	253	131
Causes of Death			
Certain Conditions in Perinatal Period.....(P00-P96)	141	105	31
Disorders related to short gestation and low birth weight.....(P07)	37	23	11
Extremely low birth weight or extreme immaturity.....(P07.0-P07.2)	29	20	7
Atelectasis.....(P28.0-P28.1)	16	13	2
Newborn affected by complications of placenta, cord, and membranes.....(P02)	15	10	4
Newborn affected by maternal complications of pregnancy.....(P01)	15	12	3
All other conditions originating in the perinatal period	58	47	11
Congenital Malformations, Deformations, and Chromosomal Abnormalities(Q00-Q99)	117	85	29
Congenital malformations of heart.....(Q20-Q24)	30	21	8
Congenital malformations and deformations of musculoskeletal system, limbs, and integument(Q65-Q85)	17	14	3
All other congenital anomalies	70	50	18
Sudden Infant Death Syndrome.....(R95)	57	26	28
Accidents.....(V01-X59)	22	11	11
All Other Causes	59	26	32

Note: Numbers following cause of death are ICD-10 codes.

Failure of the races to add to the total is due to other and unknown races.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Infant Mortality and Birth Weight

Low birth weight infants, those who are less than 2,500 grams, accounted for 54.0 percent of the South Dakota resident infant deaths from 2001 to 2005. When separated by age, 80.4 percent of the resident

neonatal deaths and 21.5 percent of all resident postneonatal deaths from 2001 to 2005 were low birth weight infants. Table 40, below, illustrates this.

Table 40
South Dakota Resident Neonatal and Postneonatal Infant Deaths by Race of Infant and Birth Weight, 2001-2005

Race of Infant	All Birth Weights	Birth Weight in Grams	
		2499 or less	2500 +
All Races	396	214	181
Neonatal	219	176	42
White	158	125	32
American Indian	53	45	8
Post-Neonatal	177	38	139
White	95	22	73
American Indian	78	16	62

Note: Failure of the races to add to the total is due to other and unknown races.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 41 below, displays infant mortality rates by birth weight. The highest infant mortality rate is for babies born who weigh less than 1,500 grams with a rate of 297.7. The second highest occurs at 1,500-1,999

grams with a rate of 34.0. The two highest rates occur below 2,500 grams which is considered low birth weight babies.

Table 41
South Dakota Resident Infant Mortality Rates by Birth Weight, 2005

Birth Weight (in Grams)	Births	Infant Deaths	Infant Mortality Rate
Total	11,466	82	7.2
<1500	131	39	297.7
1500-1999	147	5	34.0
2000-2499	480	2	4.2
2500-2999	1,814	13	7.2
3000-3499	4,404	11	2.5
3500+	4,487	12	2.7

Note: Infant mortality rates are per 1,000 live births.

Failure of births to add to total is due to unknown birth weights.

Source: South Dakota Department of Health, Office of Data Statistics, and Vital Records

Infant Mortality and Prenatal Care

Table 42 below, displays infant mortality rates by prenatal care. The highest infant mortality rate, 57.1, occurred when mothers did not have prenatal care.

In comparison, when mothers received prenatal care in the first trimester the infant mortality rate was only 6.1.

Table 42
South Dakota Resident Infant Mortality Rates by Prenatal Care, 2005

Trimester Prenatal Care Began	Births	Infant Deaths	Infant Mortality
Total	11,308	79	7.0
First Trimester	8,950	55	6.1
Second Trimester	1,913	14	7.3
Third Trimester	344	2	5.8
No Prenatal Care	70	4	57.1

Note: Infant mortality rates are per 1,000 live births.

For purposes of calculating infant mortality rates by prenatal care, multiple births and deaths (twins, triplets, etc) are counted only as a single birth and death.

Failure of births and infant deaths to add to the total is due to unknown trimester prenatal care began.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Infant Mortality and Gestation Period

Table 43 below, displays infant mortality rates by gestation period. The highest infant mortality rate occurred at less than 30 weeks with a rate of 377.8. At 30 to 32 weeks of

gestation, the infant mortality rate fell considerably to 70.7 and continued to decline as the weeks of gestation increased.

Table 43
South Dakota Resident Infant Mortality Rates by Gestation Period, 2005

Weeks of Gestation	Births	Infant Deaths	Infant Mortality
Total	11,466	82	7.2
<30 Weeks	90	34	377.8
30-32 Weeks	99	7	70.7
33-34 Weeks	177	4	22.6
35 Weeks	197	2	10.2
36 Weeks	434	2	4.6
37 Weeks	949	0	0.0
38 Weeks	2,003	11	5.5
39 Weeks	3,289	7	2.1
40+ Weeks	4,176	14	3.4

Note: Infant mortality rates are per 1,000 live births.

Failure of births and infant deaths to add to the total is due to unknown weeks of gestation.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Infant Mortality and Tobacco Use

Table 44, below, displays infant mortality rates by tobacco use of the mother. Mothers who reported they did use tobacco while pregnant had an infant mortality rate

of 8.8, while mothers who reported they did not use tobacco while pregnant had an infant mortality of 6.8.

Table 44
South Dakota Resident Infant Mortality Rates by Tobacco Use of Mother, 2005

Tobacco Use of Mother	Births	Infant Deaths	Infant Mortality
Total	11,466	82	7.2
Yes	2,041	18	8.8
No	9,417	64	6.8

Note: Infant mortality rates are per 1,000 live births.

Failure of births to add to the total is due to unknown tobacco use of the mother.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 45, below, displays infant mortality rates by tobacco use of the mother from 2001 to 2005. Mothers who reported they did use tobacco while pregnant had an infant

mortality rate of 10.8, while mothers who reported they did not use tobacco while pregnant had an infant mortality of 6.3.

Table 45
South Dakota Resident Infant Mortality Rates by Tobacco Use of Mother, 2001-2005

Tobacco Use of Mother	Births	Infant Deaths	Infant Mortality
Total	55,000	396	7.2
Yes	10,323	111	10.8
No	44,618	283	6.3

Note: Infant mortality rates are per 1,000 live births.

Failure of births to add to the total is due to unknown tobacco use of the mother.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

